ABSTRACT OF THE DISCLOSURE

A reticle inspection system for inspecting reticles can be used as an incoming inspection tool, and as a periodic and pre-exposure inspection tool. Mask shops can use it as an inspection tool compatible to their customers, and as a printable error detection tool. The inventive system detects two kinds of defects: (1) line width errors in the printed image; (2) surface defects. The line width errors are detected on the die area. The detection is performed by acquiring the image of the reticle under the same optical conditions as the exposure conditions, (i.e. wavelength, numerical aperture, sigma, and illumination aperture type) and by comparing multiple dies to find errors in the line width. Surface defects are detected all over the reticle. The detection of surface defects is performed by acquiring transmission and dark-field reflection images of the reticle and using the combined information to detect particles, and other surface defects.